

CLAIMS

1. A Group III nitride semiconductor light-emitting device comprising:

a stacked structure formed on a crystal substrate to be removed from it and including two Group III nitride semiconductor layers having different electric conductive types and a light-emitting layer which is stacked between the two Group III nitride semiconductor layers and which comprises a Group III nitride semiconductor; and

a plate body made of material different from that of the crystal substrate and formed on a surface of an uppermost layer which is opposite from the crystal substrate that is removed from the stacked structure.

2. The Group III nitride semiconductor light-emitting device according to claim 1, wherein the plate body is made of conductive material.

3. The Group III nitride semiconductor light-emitting device according to claim 1 or 2, wherein the crystal substrate is removed from the stacked structure by irradiating laser beams onto a junction interface region between the stacked structure and the crystal substrate.

4. The Group III nitride semiconductor light-emitting device according to any one of claims 1 to 3, further comprising an ohmic electrode provided on the plate body.

5. The Group III nitride semiconductor light-emitting device according to any one of claims 1 to 4, wherein the plate body

is formed on the surface of the uppermost layer through a metal layer.

6. The Group III nitride semiconductor light-emitting device according to claim 5, wherein the metal layer comprises eutectic metal film.

7. The Group III nitride semiconductor light-emitting device according to any one of claims 1 to 6, further comprising a metal reflection film for reflecting light from the light-emitting layer provided between the plate body and the surface of the uppermost layer.

8. The Group III nitride semiconductor light-emitting device according to any one of claims 1 to 7, wherein the crystal substrate is a sapphire substrate having a (0001) face on which the stacked structure is formed, and the plate body is a conductive (001)-Si monocrystal.

9. The Group III nitride semiconductor light-emitting device according to claim 8, wherein the plate body has a <110> crystal orientation that is in parallel to a [1.1.-2.0] crystal orientation of the (0001)-sapphire substrate.

10. A method of producing a Group III nitride semiconductor light-emitting device comprising the steps of:

forming on a crystal substrate to be removed a stacked structure including two Group III nitride semiconductor layers having different electric conductive types and a light-emitting layer which is stacked between the two Group III nitride semiconductor layers and which comprises a Group III nitride

semiconductor;

forming a plate body made of material different from that of the crystal substrate on a surface of an uppermost layer which is opposite from the crystal substrate; and

removing the crystal substrate.

11. An LED lamp having the Group III nitride semiconductor light-emitting device according to any one of claims 1 to 9.